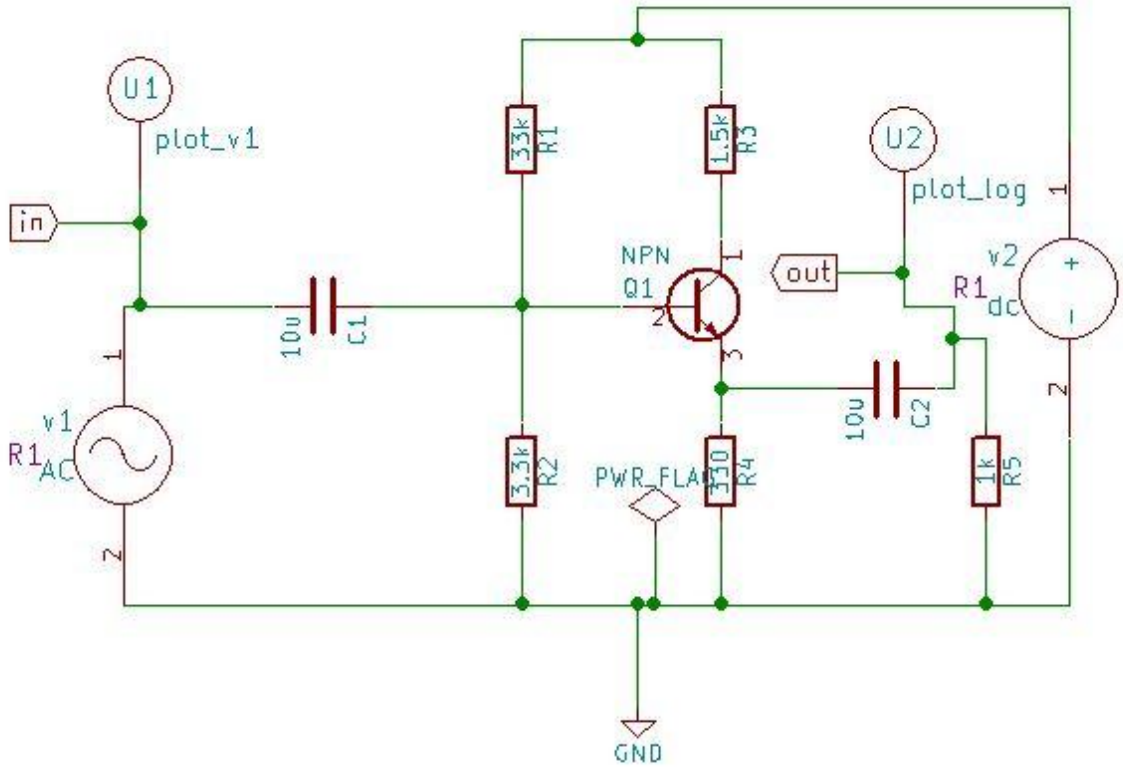
Title of the experiment:

VOLTAGE SERIES FEEDBACK AMPLIFIER

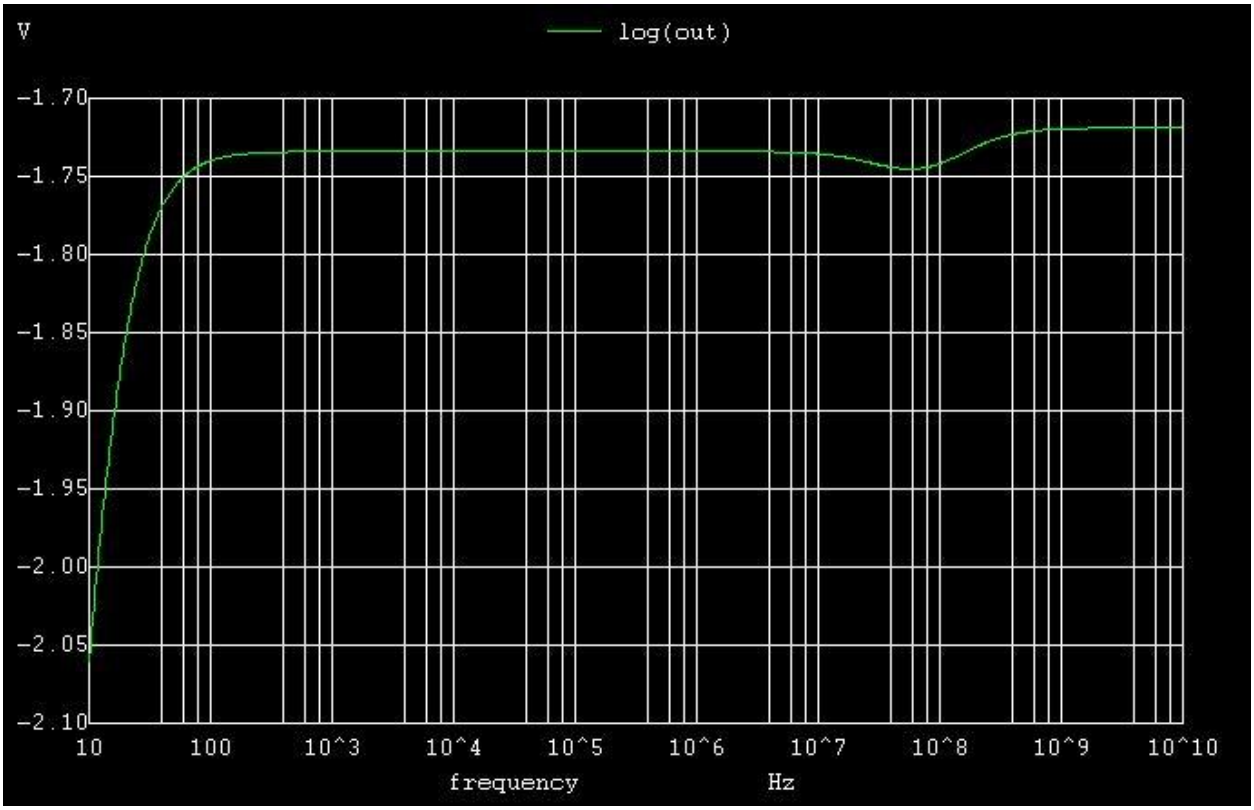
Theory: When any increase in the output signal results into the input in such a way as to cause the decrease in the output signal, the amplifier is said to have negative feedback. The advantages of providing negative feedback are that the transfer gain of the amplifier with feedback can be stabilized against variations in the hybrid parameters of the transistor or the parameters of the other active devices used in the circuit.

The most advantage of the negative feedback is that by proper use of this, there is significant improvement in the frequency response and in the linearity of the operation of the amplifier. This disadvantage of the negative feedback is that the voltage gain is decreased. In Voltage-Series feedback, the input impedance of the amplifier is increased and the output impedance is decreased. Noise and distortions are reduced considerably.

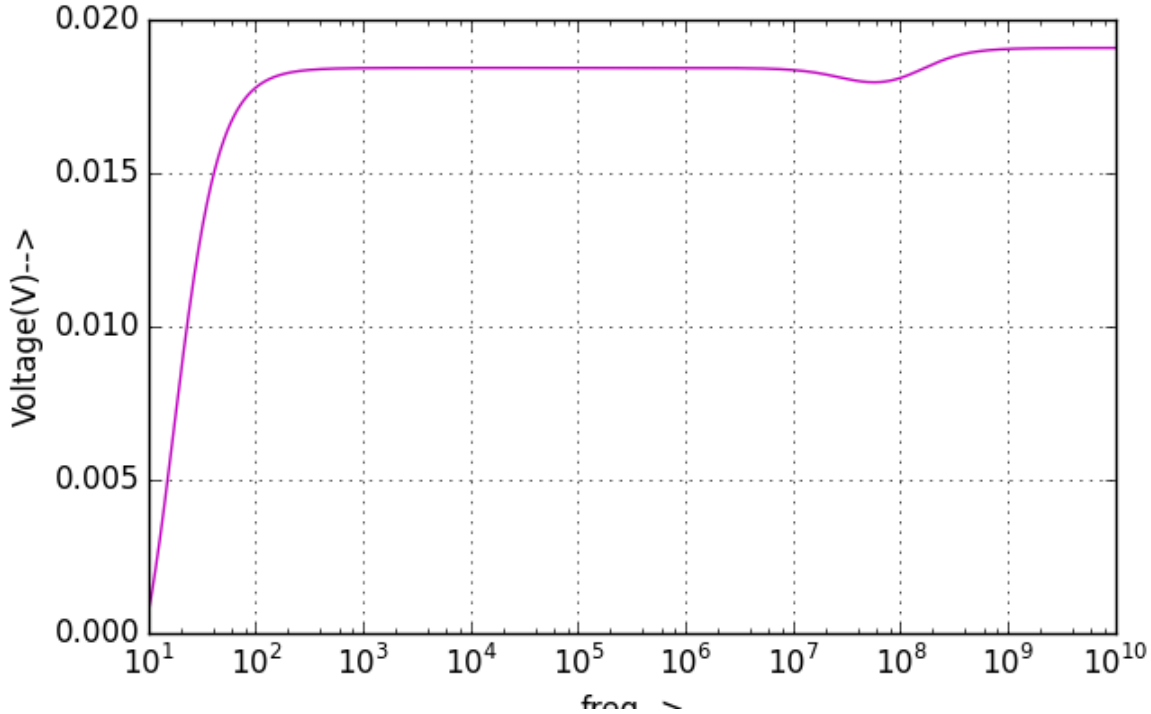
CIRCUIT DIAGRAM:



Model waveforms:



(NgSpice Plot)



(Python Plot)

Reference:

https://www.scribd.com/doc/119790927/Voltage-Series-Feedback-Amplifier